



# Environmental Baseline Survey to Support the Public-Private Venture of the Department of the Navy Housing

PEARL HARBOR NAVAL COMPLEX, CAMP STOVER, NCTAMS PAC WAHIAWA, OAHU  
and PMRF KAUAI, HAWAII

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Environmental Baseline Survey to Support the Public-Private  
Venture of the Department of Navy Housing  
Pearl Harbor Naval Complex, Camp Stover, NCTAMS PAC Wahiawa  
Oahu and PMRF Kauai, Hawaii  
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did not contain concentrations of lead exceeding the HUD hazard levels of 40 micrograms per square foot ( $\mu\text{g}/\text{ft}^2$ ) for floors and 250  $\mu\text{g}/\text{ft}^2$  for windowsills. Ninety percent (90%) of the units assessed were found to contain components painted with LBP in poor or fair condition. For additional details and recommendations specific to LBP and LBP hazards at Housing Area 1 (Camp Stover), see the *Lead Based Paint Survey and Risk Assessment for Camp Stover* (EI, 2006a). The presence of LBP and LBP hazards is a finding of concern for the Class II Property (improvements) at Housing Area 1 (Camp Stover).

#### **3.4.4 Pesticides/Herbicides**

Pesticides and/or herbicides (e.g., DDT, chlordane, dieldrin and heptachlor) residues may be present in the soils at Housing Area 1 (Camp Stover) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned an ECP ranking of Category 1 (no release or disposal reported or observed); however, pesticide/herbicides residues in soils at Housing Area 1 (Camp Stover) is a finding of concern for the Class I Property (land).

#### **3.4.5 Polychlorinated Biphenyls**

Transformers TV1, TV2, TV3A, TV4, TV5, TV6, TV7, TV8, TV9, TV11A, TV12, TV16, TV17 and TV18 are assigned an ECP ranking of Category 3 for PCBs since PCBs in soil and/or concrete wipe samples were detected above laboratory reporting limits indicating a release has occurred but not at concentrations that require a response action. Transformer TV-10 has PCBs in soil at concentrations of 0.270 milligrams per kilogram (mg/kg) which is above the United States Environmental Protection Agency (USEPA) Preliminary Remediation Goal (PRG) of 0.220 mg/kg for residential areas but below the State of Hawaii Department of Health (DOH) PRG of 1.1 mg/kg and the DOH Environmental Action Level (EAL) of 1.1 mg/kg for sites above the underground injection control (UIC) line (an area that is a potential source of drinking water) and Camp Stover is above the UIC. On this basis TV-10 is assigned an ECP ranking of Category 3 for PCBs and no further characterization is recommended. Releases have occurred at these on-site transformers. These past release sites require notification for the Class I Property (land).

#### **3.4.6 Radon**

The geologic formations of the Hawaiian Islands generally do not result in structures with elevated radon concentrations. However, elevated radon levels have been reported at other

*Lead Based Paint Survey and Risk Assessment for Ford Island* (EI, 2006c). The presence of LBP and LBP hazards is a finding of concern for the Class II Property (improvements) within Housing Area 2 (Ford Island), with the exception of the 140 units constructed at Luke Field in 2003.

#### **4.4.6 Operational Contamination/Installation Restoration Program Sites**

There are two IR Program sites located within Housing Area 2 (Ford Island) that require no additional response actions (Category 2a, 3, or 4): (1) 55 NAVFAC HI Transformer sites (Category 3 and 4); and (2) the Camel Refurbishing Area (Category 4). The Camel Refurbishing Area has recently undergone remedial action. No further response action (Category 4) was recommended at this site. These sites are within Housing Area 2 (Ford Island). These past release sites require notification for the Class I Property (land) at Housing Area 2 (Ford Island).

According to the SSR performed for Ford Island, there were 55 transformer sites comprising an IR Program site (DoN, 2000). These sites were identified as requiring additional investigation at Ford Island. Eight of these transformers are on-site. These transformer sites were investigated under the RI for Ford Island (DoN, 2003c). Three of the on-site transformers (TK-01D, TL-02, and S252D) were identified in the RI for Ford Island as not requiring further response actions. These transformers are classified as Category 3. The remaining five transformer sites within Housing Area 2 (Ford Island) (TG-01, TG-03, TG-04, TA-01, and TD-01) were identified in the RI for Ford Island as requiring soil removal actions. Soil was excavated to 1 ppm or less for these sites. LUCs are required for TG-04. These IR Program sites are classified as Category 4 (i.e., no further response actions required), with the exception of TG-04 which is a Category 4 with LUCs. These past release sites require notification for the Class I Property (land) at Housing Area 2 (Ford Island). The locations of these sites are shown on Figure 4-1.

#### **4.4.7 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 2 (Ford Island) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned an ECP ranking of Category 1 for pesticides/herbicides (no release or disposal reported or observed); however, potential pesticide/herbicides residues in soils at Housing Area 2 (Ford Island) are a finding of concern for the Class I Property (land).

and actions has been taken at this site, response actions are considered to be underway. However, all required response actions have not been completed (DoN, 2003h). The site reconnaissance of 1 May 2006 found storm drains structures at several locations within Housing Area 3 (Hale Alii) (see Appendix F Field Notes). This is a finding of concern for the Class I Property (land) at Housing Area 3 (Hale Alii) because this structure is located both within Housing Area 3 (Hale Alii) and in the vicinity of Housing Area 3 (Hale Alii).

#### **5.4.5 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 3 (Hale Alii) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned an ECP ranking of Category 1 (no release or disposal reported or observed); however, potential pesticide/herbicides residues in soils at Housing Area 3 (Hale Alii) are a finding of concern for the Class I Property (land).

#### **5.4.6 Polychlorinated Biphenyls**

Five transformer sites (G-6, G-8, G-10, G-11 and G-22) have been assigned an ECP ranking of Category 3 because releases of hazardous substances were identified at these sites; however, concentrations of contaminants were below action levels, and response actions were not required (DoN, 2003h; DoN, 2003a). These past release sites require notification for the Class I Property (land) within Housing Area 3 (Hale Alii). These sites are shown on Figure 5-1.

#### **5.4.7 Wastewater/Storm Water**

SWMU SY-84a (Shipyard storm drainage system), has been assigned an ECP ranking of Category 5 because this site is planned for investigation as part of the IR Program under SMP Group 10. Because this structure has been included in SMP Group 10, and some investigation and actions has been taken at this site, response actions are considered to be underway. However, all required response actions have not been completed (DoN, 2003h). The site reconnaissance of 1 May 2006 found storm drains structures at several locations within Housing Area 3 (Hale Alii) (see Appendix F Field Notes). This is a finding of concern for the Class I Property (land) at Housing Area 3 (Hale Alii) because this structure is located both within Housing Area 3 (Hale Alii) and in the vicinity of Housing Area 3 (Hale Alii).

petroleum products are underway, but all required response actions have not been completed (DoN, 2003h). This is a finding of concern for the Class I Property (land) within Housing Area 4 (Hospital Point) because this site is both on-site and in the vicinity of Housing Area 4 (Hospital Point). Oscar Pier 2 plume is shown on Figure 6-1.

#### **6.4.5 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 4 (Hospital Point) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned an ECP ranking of Category 1 (no release or disposal reported or observed); however, potential pesticide/herbicides residues in soils at Housing Area 4 (Hospital Point) are a finding of concern for the Class I Property (land) within Housing Area 4 (Hospital Point).

#### **6.4.6 Polychlorinated Biphenyls**

Transformer site A-4 was identified as requiring soil removal actions (Category 4). Soil was excavated to 1 ppm or less for this site (DoN, 2003h). This past release site is a finding of concern for the Class I Property (land) at Housing Area 4. This site is shown on Figure 6-1.

Transformer site A-2 requires additional response actions (Category 5) (DoN, 2003h). In addition, up to 3 ppm PCB has been found at Oscar 2 Pier plume (DoN, 2003h). Oscar 2 Pier plume is both on-site and in the vicinity of Housing Area 4 (Hospital Point). It has an ECP ranking of Category 2c for IR. These are findings of concern for the Class I Property (land) within Housing Area 4 (Hospital Point). The locations of these sites is shown on Figure 6-1.

#### **6.4.7 Other On-site Findings**

Housing Area 4 (Hospital Point) is part of the Naval Shipyard and has no natural resources (DoN, 2001c). However, the Shipyard is included in the NHL and many of the buildings are considered historic places (cultural resources). Historic facilities located within Housing Area 4 (Hospital Point) are Buildings 301-303, 311, 316, 317, 324, 353, 359, 362, 363-365, 367-369, 372, 453, 457 and 829 (DoN, 2002b). A descriptive list of historical and cultural sites within Housing Area 4 (Hospital Point) is included in Table A-2 in Appendix A. This is a finding of concern of the Class I Property (land) and the Class II Property (improvements) (DoN, 2002b).

#### **7.4.3 Heavy Metals**

Canec (made from processed sugar cane) building materials such as wallboard and ceiling boards may exist at the Subject Property. The potential exists for arsenic (used in canec as a pesticide and as a retardant for mold and mildew) exposure during renovation and/or demolition of canec building materials. This is a finding of concern for the Class II Property (improvements).

#### **7.4.4 Lead-based Paint**

A LBP survey and risk assessment was conducted for Housing Area 5 (Makalapa). LBP was detected at Makalapa housing units. Dust wipe samples collected from interior surfaces in eight of the units contained concentrations of lead exceeding HUD hazard levels of  $40 \mu\text{g}/\text{ft}^2$  for floors and  $250 \mu\text{g}/\text{ft}^2$  for windowsills. See Section 7.6.3 for soil sample discussion. Ninety-four percent (94%) of the units were found to contain components painted with LBP in poor or fair condition. For additional details and recommendations specific to LBP and LBP hazards at Housing Area 5 (Makalapa), see the *Lead Based Paint Survey and Risk Assessment for Makalapa* (EI, 2006h). The presence of LBP and LBP hazards is a finding of concern for the Class II Property (improvements) within Housing Area 5 (Makalapa), excluding playgrounds remediated by the DoN on or before August 28, 2006 (this includes the playground behind 7 & 9 Kamakani Place, the basketball court behind 9 Midway Drive, the playground next to 3 Midway Drive, and the Tennis Court behind 40 Halawa Drive).

Several structures were observed with external peeling paint despite the exterior paint being in overall fair to good condition. These structures include 3A/3B Samoa Place, the white wooden guard rail along Samoa Place, detached carport and housing structure 5A/5B Makalapa Drive, detached carport 3A/3B Makalapa Drive, attached carport at 5 Midway Drive, and detached carport 8A/8B Kamakani Place and housing structure 10 Midway Drive. The peeling paint on these structures is a LBP hazard finding of concern for the Class I Property (land) and the Class II Property (improvements) at Housing Area 5 (Makalapa).

#### **7.4.5 Pesticides/Herbicides**

Pesticides and/or herbicides residues may be present in the soils at Housing Area 5 (Makalapa) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues (e.g., DDT, chlordane, dieldrin and heptachlor) are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned an ECP ranking of Category 1 for pesticide/herbicide (no release or disposal reported or observed);

play areas exceeding 400 ppm but not exceeding 1,200 ppm were not deemed a soil-lead hazard in the LBP Risk Assessment, which is based on HUD guidance. However, the concentrations did exceed the USEPA Region 9 residential PRGs; therefore, this site has been assigned an ECP ranking of Category 6 (releases have occurred and response actions have not begun). The presence of lead-contaminated soil is a finding of concern for the Class I Property (land) within Housing Area 6 (Manana).

#### **8.4.3 Lead-based Paint**

A LBP survey and risk assessment was conducted for Housing Area 6 (Manana). LBP was detected at the housing units. Dust wipe samples collected from interior surfaces did not contain concentrations of lead exceeding HUD hazard levels of 40  $\mu\text{g}/\text{ft}^2$  for floors and 250  $\mu\text{g}/\text{ft}^2$  for windowsills. See Section 8.4.2 for soil sample discussion. Ninety-four percent (94%) of the units were found to contain components painted with LBP in poor or fair condition. For additional details and recommendations specific to LBP and LBP hazards at Housing Area 6 (Manana), see the *Lead Based Paint Survey and Risk Assessment for Manana* (EI, 2006j). The presence of LBP and LBP hazards is a finding of concern for the Class II Property (improvements) at Housing Area 6 (Manana).

#### **8.4.4 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 6 (Manana) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned an ECP ranking of Category 1 for pesticide/herbicide (no release or disposal reported or observed); however, potential pesticide/herbicides residues in soils at Housing Area 6 (Manana) are considered a finding of concern for the Class I Property (land) within Housing Area 6 (Manana).

#### **8.4.5 Radon**

The geologic formations of the Hawaiian Islands generally do not result in structures with elevated radon concentrations. However, elevated radon levels have been reported at other military installations on Oahu. No radon screening reports or test results were available for Manana, thus it is possible that radon occurs in the Manana Housing Area at levels exceeding the USEPA recommended corrective action level of 4 pCi/L. Radon is a finding of concern for the Class II Property (improvements) within Housing Area 6 (Manana).

#### **9.4.3 Lead-based Paint**

A LBP survey and risk assessment was conducted for three groups of housing units within Housing Area 7 (Marine Barracks), grouped by year of construction. LBP was detected at all three housing groups. Dust wipe samples collected from interior surfaces in five of the units contained concentrations of lead exceeding HUD hazard levels of  $40 \mu\text{g}/\text{ft}^2$  for floors and  $250 \mu\text{g}/\text{ft}^2$  for windowsills. Additionally, the neighborhood wide average of dust on interior windowsills exceeded HUD hazard levels in two of the housing groups, making leaded dust on interior windowsills a neighborhood-wide concern (applicable to units constructed in 1911 and 1912). See Section 9.4.2 for soil sample discussion. All three housing groups were found to contain components painted with LBP in poor or fair condition. For additional details and recommendations specific to LBP and LBP hazards at Housing Area 7 (Marine Barracks), see the *Lead Based Paint Survey and Risk Assessment for Marine Barracks* (EI, 2006k). The presence of LBP and LBP hazards is a finding of concern for the Class II Property (improvements) at Housing Area 7 (Marine Barracks).

#### **9.4.4 Operational Contamination/Installation Restoration Program Sites**

SWMU SY-84a (Shipyard storm drainage system), has been assigned an ECP ranking of Category 5 because this site is planned for investigation as part of the IR Program under SMP Group 10. Because this structure has been included in SMP Group 10, and some investigation and actions has been taken at this site, response actions are considered to be underway. However, all required response actions have not been completed (DoN, 2003h). The site reconnaissance of 1 May 2006 found several storm drains within Housing Area 7 (Marine Barracks) (see Appendix F). This is a finding of concern for the Class I Property (land) at Housing Area 7 because this structure is located both within Housing Area 7 (Marine Barracks) and in the vicinity of Housing Area 7 (Marine Barracks).

One transformer site, Station D-11, in Building S-986 across from Unit 203, has been assigned an ECP ranking of Category 3 for IR because releases of hazardous substances was identified; however, concentrations of contaminants were below action levels, and response actions were not required (DoN, 2003h). This past release site requires notification for the Class I Property (land) at Housing Area 7. This site is shown on Figure 9-1.

#### **9.4.5 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 7 (Marine Barracks) as a result of past pest management,



investigation for fuel releases is recommended (DoN, 2003f). This facility is considered a finding of concern for the Class I Property (land) of Housing Area 9 (Pearl City Peninsula).

Canec building materials may exist within Housing Area 9 (Pearl City Peninsula). The potential exists for arsenic exposure during renovation and/or demolition of canec building materials. This is a finding of concern for the Class II Property (improvements), with the exception of the 164 units constructed in 1996.

#### **11.4.4 Lead-based Paint**

A LBP survey and risk assessment was conducted for two groups of housing units within Housing Area 9 (Pearl City Peninsula), grouped by year of construction. LBP was detected at the Pearl City Peninsula housing units. None of the dust wipe samples collected from interior surfaces contained concentrations of lead exceeding HUD hazard levels of  $40 \mu\text{g}/\text{ft}^2$  for floors and  $250 \mu\text{g}/\text{ft}^2$  for windowsills. See Section 11.6.1 for soil sample discussion. Eighty percent (80%) of the units constructed in 1965 and forty-five percent (45%) of the units constructed in 1970 were found to contain components painted with LBP in poor or fair condition. For additional details and recommendations specific to LBP and LBP hazards within Housing Area 9 (Pearl City Peninsula), see the *Lead Based Paint Survey and Risk Assessment for Pearl City* (EI, 2006c). The presence of LBP and LBP hazards is a finding of concern for the Class II Property (improvements) within Housing Area 9 (Pearl City Peninsula), with the exception of the 164 units constructed in 1996 and the basketball court remediated by the DoN on or before August 28, 2006 (Basketball court #1).

#### **11.4.5 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 9 (Pearl City Peninsula) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned an ECP ranking of Category 1 for pesticide/herbicide (no release or disposal reported or observed); however, potential pesticide/herbicides residues in soils at Housing Area 9 (Pearl City Peninsula) are a finding of concern for the Class I Property (land) within Housing Area 9 (Pearl City Peninsula).

#### **14.4.4 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 12 (Halawa) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned an ECP ranking of Category 1 for pesticide/herbicide (no release or disposal reported or observed); however, potential pesticide/herbicides residues in soils at Housing Area 12 (Halawa) are considered a finding of concern for the Class I Property (land) within Housing Area 12 (Halawa).

#### **14.4.5 Polychlorinated Biphenyls**

Transformer TV-9 was assigned an ECP ranking of Category 6 for PCBs since response actions have not begun (DoN, 2002d). TV-9 is located in Housing Area 12 (Halawa) and, therefore, it is considered a finding of concern for the Class I Property (land) within Housing Area 12 (Halawa). The approximate location of this transformer is presented on Figure 14-2.

Transformer TV3 at Housing Area 12 (Halawa) was assigned an ECP ranking of Category 3 for PCBs (a release has occurred but at concentrations that do not require a response action). This past release site requires notification for the Class I Property (land) within Housing Area 12 (Halawa). This site is shown on Figure 14-2.

#### **14.4.6 Other On-Site Findings**

Consumer products which may have special disposal requirements (refrigerants, fluorescent light tubes and/or ballasts, monitors, radioactive material in smoke detectors, etc.) may be present at the Subject Property. This is a finding of concern for the Class II Property (improvements) at Housing Area 12 (Halawa).

### **14.5 OFF-SITE FINDINGS REQUIRING NOTIFICATION**

Housing Area 12 (Halawa) is located at the base of Halawa Heights Road, north of and immediately adjacent to the H-1 Highway in Aiea. Residential housing is located north and northeast of the Housing Area 12 (Halawa). These housing areas are known as Aiea Heights and Halawa Heights respectively. Halawa Heights begins immediately adjacent to Housing Area 12 (Halawa) and it extends up hill for approximately three quarters of a mile separating Housing Area 12 (Halawa) from Camp Smith. The elevation of Housing Area 12 (Halawa) ranges from approximately 80 feet above msl on the south east end to 110 feet above msl on the west end of the housing area (USGS, 2002). The elevation rises as you go up hill to Camp Smith which is at

majority of the areas within Housing Area 13 (Hale Moku). All structures were found to be in good condition which is expected for newly constructed homes.

### **15.3 SUMMARY OF ENVIRONMENTAL DATABASE SEARCH**

Regulatory databases were searched for indications of environmental concerns that may affect the Subject Property, Housing Area 13 (Hale Moku). The databases were searched by EDR; their report is contained in Appendix C and summarized in Table 15-3, at the end of this section. The EBS examined the following potential environmental conditions: AUP; ACM; HS/HM/HW; heavy metals; landfills; LBP; mixed wastes; MW/BW; operationally contaminated/IR Program sites; ordnance/UXO; pesticides/herbicides; PCBs; potable water; radioactive material; radon; WW/SW; and other on-site and off-site findings. Each of the preceding environmental aspects was researched for the following four categories: on-site findings requiring notification (findings of concern); off-site findings requiring notification (findings of concern); on-site finding not requiring notification (findings of no concern); and, off-site findings not requiring notification (findings of no concern). The first three categories are included in this section; the fourth category can be found in Appendix H. Therefore, if an individual environmental aspect is not contained within one of these categories it is as a result of the research (including site reconnaissance) determination that it is not an environmental issue for that category. Additionally, the term vicinity is used in regards to off-site findings in reference to the ASTM standard distance search criteria for each environmental aspect.

### **15.4 ON-SITE FINDINGS REQUIRING NOTIFICATION**

The following are findings for the Subject Property for which a notification will be made in the FOS.

#### **15.4.1 Asbestos**

The potential for ACM hazard exists during renovation and/or demolition for transite pipe only within Housing Area 13 (Hale Moku) due to the dates of construction (2000 and 2001) of the homes. This is a finding of concern for the Class II Property (improvements) within Housing Area 15 (Hale Moku).

#### **15.4.2 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 13 (Hale Moku) as a result of past pest management,

#### **16.4.2 Asbestos**

The potential for ACM (e.g., transite pipe, transite sheets, window caulking, flooring tiles, linoleum, ceiling materials and roofing materials) hazard exists during renovation and/or demolition of the community center and is considered a finding of concern for the Class II Property (improvements) for the community center within Housing Area 14 (Doris Miller Park). The potential for ACM hazard exists during renovation and/or demolition for transite pipe only within Housing Area 14 (Doris Miller Park) due to the dates of construction (1990 and 1996) of these homes. This is a finding of concern for the Class II Property (improvements) within Housing Area 14 (Doris Miller Park).

#### **16.4.3 Heavy Metals**

Canec building materials may exist at the community center on the Subject Property. The potential exists for arsenic exposure during renovation and/or demolition of canec building materials at the community center. This is a finding of concern for the Class II Property (improvements) for the community center within Housing Area 14 (Doris Miller Park).

One site within Housing Area 14 (Doris Miller Park) was identified as a having lead in soil and all response actions have been taken (Category 4). This past release site requires notification for the Class I Property (land) within Housing Area 14 (Doris Miller Park). The location of this site is shown on Figure 16-1.

#### **16.4.4 Lead-based Paint**

A lead-based paint survey was not conducted for Housing Area 14 (Doris Miller Park). Therefore, potential for LBP hazards exists during demolition and/or renovation activities at the community center. The housing units at Housing Area 14 (Doris Miller Park) were constructed in 1990 and 1996 and are not likely to contain lead-based paint. During the 27 June 2006 site inspection, the community center was observed to have deteriorated exterior paint. The potential for LBP hazards at the community center and the presence of deteriorated exterior paint is considered a finding of concern for the Class I Property (land) and the Class II Property (improvements) for the community center within Housing Area 14 (Doris Miller Park).

#### **16.4.5 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 14 (Doris Miller Park) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past

building materials. This is a finding of concern for the Class II Property (improvements) within Housing Area 15 (Maloelap).

#### **17.4.4 Lead-based Paint**

A LBP survey and risk assessment was conducted for two groups of housing units within Housing Area 15 (Maloelap), grouped by year of construction. LBP was detected at both housing groups. Dust wipe samples collected from interior surfaces did not contain concentrations of lead exceeding HUD hazard levels of  $40 \mu\text{g}/\text{ft}^2$  for floors and  $250 \mu\text{g}/\text{ft}^2$  for windowsills. See Section 17.6.2 for soil sample discussion. All six units in the 1947 group were found to contain components painted with LPB in poor or fair condition. Eighty percent (80%) of the units in the 1973 group were found to contain components painted with LBP in poor or fair condition, although none of the components were considered to be a neighborhood-wide concern. For additional details and recommendations specific to LBP and LBP hazards at Housing Area 15 (Maloelap), see the *Lead Based Paint Survey and Risk Assessment for Maloelap* (EI, 2006i). The presence of LBP and LBP hazards is a finding of concern for the Class II Property (improvements) at Housing Area 15 (Maloelap).

#### **17.4.5 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 15 (Maloelap) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned an ECP ranking of Category 1 (no release or disposal reported or observed); however, potential pesticide/herbicides residues in soils at Housing Area 15 (Maloelap) are considered a finding of concern for the Class I Property (land) within Housing Area 15 (Maloelap).

#### **17.4.6 Polychlorinated Biphenyls**

Transformers TV1 MH and TV-2 MH of Maloelap are located within Housing Area 15 (Maloelap) and have been assigned an ECP ranking of Category 3 (no response actions required) (DoN, 2002d; DoN, 2003a). These past release sites require notification for the Class I Property (land) within Housing Area 15 (Maloelap). Their locations are shown on Figure 17-1.

#### **17.4.7 Other On-Site Findings**

Historic facilities (cultural resources) including single family dwellings exist in Housing Area 15 (Maloelap) (DoN, 2002a). Appendix A, Table A-2 provides a listing of the historic facilities of

not begun). The presence of lead-contaminated soil is a finding of concern for the Class I Property (land) within Housing Area 16 (Little Makalapa).

#### **18.4.3 Lead-based Paint**

A LBP survey and risk assessment was conducted for Housing Area 16 (Little Makalapa). LBP was detected at the housing area. Dust wipe samples collected from interior surfaces in seven of the units contained concentrations of lead exceeding HUD hazard levels of 40  $\mu\text{g}/\text{ft}^2$  for floors and 250  $\mu\text{g}/\text{ft}^2$  for windowsills. Lead in dust levels were considered to be a housing group wide hazard for Housing Area 16 (30 units). See Section 18.4.2 for soil sample discussion. All ten assessed units were found to contain components painted with LBP in poor or fair condition. For additional details and recommendations specific to LBP and LBP hazards at Housing Area 16 (Little Makalapa), see the *Lead Based Paint Survey and Risk Assessment for Little Makalapa* (EI, 2006g). The presence of LBP and LBP hazards is a finding of concern for the Class II Property (improvements) at Housing Area 16 (Little Makalapa).

#### **18.4.4 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 16 (Little Makalapa) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned an ECP ranking of Category 1 for pesticide/herbicide (no release or disposal reported or observed); however, potential pesticide/herbicides residues in soils at Housing Area 16 (Little Makalapa) are a finding of concern for the Class I Property (land) within Housing Area 16 (Little Makalapa).

#### **18.4.5 Other On-Site Findings**

Historic facilities (cultural resources) exist in Housing Area 16 (Little Makalapa) (DoN, 2002a). Appendix A, Table A-2 provides a listing of the historic facilities of the Little Makalapa Housing Area. These are findings of concern for the Class I Property (land) and Class II Property (improvements) within Housing Area 16 (Little Makalapa).

Consumer products which may have special disposal requirements (refrigerants, fluorescent light tubes and/or ballasts, monitors, radioactive material in smoke detectors, etc.) may be present at the Subject Property. This is a finding of concern for the Class II Property (improvements) at Housing Area 16 (Little Makalapa).

Five housing units within Housing Area 17 (Pearl City PAN AM) were assessed for the presence of lead in soil as part of a LBP Risk Assessment (EI, 2006m). Samples were collected from exterior areas of exposed soil, including building driplines, carport driplines, play areas, and other areas with bare soil totaling nine square feet or greater. One of the soil samples was found to contain concentrations of lead exceeding the USEPA Region 9 PRG of 400 ppm. The location is shown on Figure 19-1 and listed in Table 19-4. Concentrations of lead in soil samples collected from non-play areas exceeding 400 ppm but not exceeding 1,200 ppm were not deemed a soil-lead hazard in the LBP Risk Assessment, which is based on HUD guidance. However, the concentration did exceed the USEPA Region 9 residential PRG; therefore, this site has been assigned an ECP ranking of Category 6 (releases have occurred and response actions have not begun). The presence of lead-contaminated soil is a finding of concern for the Class I Property (land) at Housing Area 17 (Pearl City PAN AM).

#### **19.4.3 Lead-based Paint**

A LBP survey and risk assessment was conducted for three groups of housing units within Housing Area 17 (Pearl City PAN AM), grouped by year of construction. LBP was detected at all three housing groups. A dust wipe sample collected from an interior windowsill at one of the units contained concentrations of lead exceeding the HUD hazard level of  $250 \mu\text{g}/\text{ft}^2$  for window sills. See Section 19.4.2 for soil sample discussion. All three housing groups were found to contain components painted with LBP in poor or fair condition. For additional details and recommendations specific to LBP and LBP hazards at Housing Area 17 (Pearl City PAN AM), see the *Lead Based Paint Survey and Risk Assessment for Pearl City* (EI, 2006m). The presence of LBP and LBP hazards is a finding of concern for the Class II Property (improvements) within Housing Area 17 (Pearl City PAN AM).

#### **19.4.4 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 17 (Pearl City PAN AM) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past application of these chemicals rather than release or disposal activities, the residues have been assigned a pesticide/herbicide ranking of Category 1 (no release or disposal reported or observed); however, potential pesticide/herbicides residues in soils at Housing Area 17 (Pearl City PAN AM) are considered a finding of concern for the Class I Property (land) within Housing Area 17 (Pearl City PAN AM).

Additionally, the term vicinity is used in regards to off-site findings in reference to the ASTM standard distance search criteria for each environmental aspect.

## **20.4 ON-SITE FINDINGS REQUIRING NOTIFICATION**

The following are findings for the Subject Property for which a notification will be made in the FOS.

### **20.4.1 Asbestos**

The potential for ACM (e.g., transite pipe, transite sheets, window caulking, flooring tiles, linoleum, ceiling materials and roofing materials) hazard exists during renovation and/or demolition activities and is considered a finding of concern for the Class II Property (improvements) at Housing Area 18 (PMRF Kauai).

### **20.4.2 Heavy Metals**

Canec (made from processed sugar cane) building materials such as wallboard and ceiling boards may exist at the Subject Property. The potential exists for arsenic (used in canec as a pesticide and as a retardant for mold and mildew) exposure during renovation and/or demolition of canec building materials. This is a finding of concern for the Class II Property (improvements).

### **20.4.3 Lead-based Paint**

A LBP survey and risk assessment was conducted for Housing Area 18 (PMRF Kauai). LBP was detected at the PMRF Kauai housing units. A dust wipe sample collected from an interior floor was found to contain concentrations of lead exceeding the HUD hazard level of  $40 \mu\text{g}/\text{ft}^2$  for floors. See Section 20.6.3 for soil sample discussion. Sixty-six percent (66%) of the units assessed were found to contain components painted with LBP in poor or fair condition, although none of the components were considered to be a neighborhood-wide concern. For additional details and recommendations specific to LBP and LBP hazards at Housing Area 18 (PMRF Kauai), see the *Lead Based Paint Survey and Risk Assessment for PMRF Kauai* (EI, 2006o). The presence of LBP and LBP hazards is a finding of concern for the Class II Property (improvements) at Housing Area 18 (PMRF Kauai).

### **20.4.4 Pesticides/Herbicides**

Pesticides and/or herbicides residues (e.g., DDT, chlordane, dieldrin and heptachlor) may be present in the soils at Housing Area 18 (PMRF Kauai) as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues are the result of past



not been completed. Transformers at Building 118, S119 and 120 within NCTAMS PAC Wahiawa are IR Program sites and require additional response actions (Category 5). Solid Waste Management Unit (SWMU) SY-84a, the Shipyard storm drainage system, is part of both the Marine Barracks and Hale Alii housing areas. This system requires further actions (Category 5) as part of the IR Program under Site Management Plan (SMP) Group 10. A transformer site at Marine Barracks was investigated as part of the IR Program, with no response actions required (Category 3). This past release site is a finding of concern.

**Pesticides/Herbicides.** Pesticides and/or herbicides residues (e.g., Dichlorodiphenyltrichloroethane (DDT), chlordane, dieldrin and heptachlor) may be present in the soils at all housing areas as a result of past pest management, agricultural and/or landscape maintenance practices. Because the residues result from past applications rather than release or disposal activities, the residues have been assigned an ECP of Category 1; however, these are findings of concern.

**PCBs.** Transformer site A-2 at Hospital Point requires additional response actions (Category 5), and transformer site A-4 has been remediated (Category 4). In addition, up to 3 ppm PCB has been found at Oscar 2 Pier at Hospital Point (Category 2c for IR). Transformers at Building 118, S119 and 120 at NCTAMS PAC Wahiawa are IR Program sites and require additional response actions (Category 5). Transformer TV1 CPH within Catlin Park requires additional response actions (Category 5). Response actions have not started (Category 6) for transformer TV-9 at Halawa. Transformer sites at the following housing areas were investigated and do not require response actions (Category 3): Camp Stover, Ford Island, Hale Alii, Marine Barracks, Pearl City Peninsula, Catlin Park, Halawa, Doris Miller Park, and Maloelap. Transformer sites at Ford Island were remediated and do not require further response actions (Category 4 and Category 4 with LUCs). These past releases are findings of concern.

**Wastewater/Stormwater.** SWMU SY-84a, the Shipyard storm drainage system, is part of both the Marine Barracks and Hale Alii housing areas. This system requires further actions (Category 5) as part of the IR Program under SMP Group 10.

**Other Environmental Concerns – Cultural Resources.** On-site historic and cultural sites and/or management zones exist at Ford Island, Hale Alii, Hospital Point, Little Makalapa, Makalapa, Manana, Marine Barracks, NCTAMS PAC Wahiawa, Red Hill, Maloelap, and Pearl City PAN AM.

### **21.1.2 Class II Property (Improvements)**

Based on the findings of this report, the Class II Property (improvements) within the 18 housing areas is classified, based on environmental condition, as belonging to Category 1 with no exceptions. However,